	RF Errors Corrected by the STIC ystems Branch  CRF Processing Date:
'al N	umber: 09852, 922 CRF Processing Date: (STIC sta
	Changed a file from non-ASCII to ASCII
	Changed the margins in cases where the sequence text was "wrapped" down to the next line.
	Edited a format error in the Current Application Data section, specifical ENTERED
	Edited the Current Application Data section with the actual current number. The number inputted by the applicant was the pnor application data; or other
	Added the mandatory heading and subheadings for "Current Application Data".
	Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integer.
	Changed the spelling of a mandatory field (the headings or subheadings), specifically;
	Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were:
	Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:
	Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place.
	Inserted colons after headings/subheadings. Headings edited included:
	Deleted extra, invalid, headings used by an applicant, specifically:
/	Deleted: non-ASCII garbage at the beginning end of files secretary initials/filename at end of file page numbers throughout text; other invalid text, such as
	Inserted mandatory headings, specifically:
	Corrected an obvious error in the response, specifically:
	Edited identifiers where upper case is used but lower case is required, or vice versa.
	Corrected an error in the Number of Sequences field, specifically:
	A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted.
	Deleted <i>ending</i> stop codon in amino acid sequences and adjusted the *(A)Length:* field accordingly (error due to a Patentin bug). Sequences corrected:
ļ	Other:

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Output Set: N:\CRF3\06202001\1852922.raw

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      4 <120> TITLE OF INVENTION: MODIFIED THERMOSTABLE DNA POLYMERASE
      6 <130> FILE REFERENCE: 000053
C--> 8 <140> CURRENT APPLICATION NUMBER: US/09/852,922
C--> 9 <141> CURRENT FILING DATE: 2001-05-10
     11 <150> PRIOR APPLICATION NUMBER: 2000-138796
     12 <151> PRIOR FILING DATE: 2000-05-11
     14 <160> NUMBER OF SEQ ID NOS: 28
     16 <170> SOFTWARE: PatentIn Ver. 2.1
     18 <210> SEQ ID NO: 1
     19 <211> LENGTH: 5342
     20 <212> TYPE: DNA
     21 <213> ORGANISM: Pyrococcus kodakaraensis
     23 <220> FEATURE:
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     25 <222> LOCATION: (156)..(5165)
     26 <223> OTHER INFORMATION: 1374-2453 intron, 2709-4316 intron
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     33 cctggattgt tctacaagat tatgggggat gaaag atg atc ctc gac act gac
                                                Met Ile Leu Asp Thr Asp
     34
      35
      37 tac ata acc gag gat gga aag cct gtc ata aga att ttc aag aag gaa
                                                                            221
      38 Tyr Ile Thr Glu Asp Gly Lys Pro Val Ile Arg Ile Phe Lys Lys Glu
                      10
      41 aac ggc gag ttt aag att gag tac gac cgg act ttt gaa ccc tac ttc
                                                                            269
      42 Asn Gly Glu Phe Lys Ile Glu Tyr Asp Arg Thr Phe Glu Pro Tyr Phe
                                      30
      45 tac gcc ctc ctg aag gac gat tct gcc att gag gaa gtc aag aag ata
                                                                            317.
      46 Tyr Ala Leu Leu Lys Asp Asp Ser Ala Ile Giu Glu Val Lys Lys Ile
      49 acc gcc gag agg cac ggg acg gtt gta acg gtt aag cgg gtt gaa aag
      50 Thr Ala Glu Arg His Gly Thr Val Val Thr Val Lys Arg Val Glu Lys
                              60
      51 55
      53 gtt cag aag aag ttc ctc ggg aga cca gtt gag gtc tgg aaa ctc tac
                                                                            413
      54 Val Gln Lys Lys Phe Leu Gly Arg Pro Val Glu Val Trp Lys Leu Tyr
                                               80
                          75
      57 ttt act cat ccg cag gac gtc cca gcg ata agg gac aag ata cga gag
                                                                            461
      58 Phe Thr His Pro Gln Asp Val Pro Ala Ile Arg Asp Lys Ile Arg Glu
                                           95
                       90
      59
      61 cat ggg gca gtt att gac atc tac gag tac gac ata ccc ttc gcc aag
                                                                            509
      62 His Gly Ala Val Ile Asp Ile Tyr Glu Tyr Asp Ile Pro Phe Ala Lys
                                                          115
                                      110
                 105
      65 cgc tac ctc ata gac aag gga tta gtg cca atg gaa ggc gac gag
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      66 Arg Tyr Leu Ile Asp Lys Gly Leu Val Pro Met Glu Gly Asp Glu Glu
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DATE: 06/21/2001 RAW SEQUENCE LISTING
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71	135	_				140					140	. +	acc		· dad	r da	a	653
73	gag	tto	gcc	gag	g ggg	cca	atc	ctt	ato	j ata	ago	tac	ycc 71-	, yac	Gli	ı Gl:	-	
74	Glu	Phe	Ála	Ğli	g ggg u Gly	Pro	Ile	Leu	Met			Tyr	ATC	ı wət	16'	5	_	
75	UIU		•		155					160	)			- 4-00	- ~+	רא +	_	701
73	~~~	acc	. agg	at	155 g ata	act	tgg	aag	aa	c gto	g gat	cto	CCC	c tac	. y.	i ya	_	,01
7.0	999	η I =	Δrc	y Va	g ata l Ile	Thr	Trp	Lys	As	n Val	Asp	Leu	Pro	о Туі	r va.	I AS	þ	
78	СТУ	MIC	LAL	17	n		-	_	17	5				180			_	749
79			. + 00	_		ago	gao	ato	at	a aaq	gicgo	c tto	ct	c cg	t gt	t gt	g	143
81	gtc	gu	Con	y ac ∽ mh	g gag r Glu	Arc	Glu	Met	: Il	e Ly:	s Ar	g Phe	e Le	u Ar	g Va	ı va	1	
82	Val	. val	101	- - 111	1 010		,	190	)	_			19	5				7.07
83			18		c ccg		- att		~ ~+	a ac	c ta	c aa	c gg	c ga	c aa	c tt	.C	797
85	aag	gad	g aaa	a ga	c ccc p Pro	y yav	y ye	. T.e.	1 T1	e Th	r Tv	r Ası	n Gl	y As	p As	n Ph	e	
86	Lys	Gl	ц Гу	s As	p Pro	) AS	205	: пс.			_	21	0					
87		20	0		t ct				a ta	t da	а аа	a ct	c qq	a at	a aa	c tt	C	845
89	gad	tt	c gc	c ta	it ct	g aa	a aaq	y Cy	~ Cv	e Gl	u I.V	s Le	u Ğĺ	y Il	e As	n Ph	ne	
90	Asp	Ph	e Al	а Ту	r Lei	ј га	г гу	s Ar	g Cy	2 91	u 23 22	_		_		23	30	
91	215	5				22	0			.~ ~~	~ 2±	t ca	α ac	ra at	a ac	ac ga	ac	893
93	gco	c ct	c gg	a ac	gg ga	t gg	a ag	c ga	g cc	gaa	y at	o G1	n Ar	a Me	t Gl	Ly As	зр	
94	Āla	a Le	u Gl	y Aı	gg gat cg Asj	p Gl	y Se	r Gl	u Pi		-	.6 01	11 111	9	24	15	-	
9.5	)				23	5				24		~ ++	a a=	t ct	c ta	at c	ct	941
97	Jago	a tt	t ac	c gt	23 to ga	a gt	g aa	g gg	a co	gg at	a ca	10 LL	C 96	n Le	) T	ur P	ro	
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1 /	12 ·	u		265	-			2	270					213	~a+	a a a	αaa	1037
1	05 N5 +	a+ 0			gtc t	tc	ggt c	ag o	ccg	aag (	gag a	aag g	jtt '	tac (	JCL	Clu	Glu	
1	טט נ	ac 9	2111 1	Ala	gtc t Val F	he (	Sly G	ın I	Pro	Lys (	Glu !			Tyr A	Ala	GIU	GIU	
1	02 T 90	λΤ	200	114			_ 2	285				2	290				~~~	1085
1	07	4	200	202	gcc t	aa o	raa a	acc (	ggc	gag	aac	ctt(	gag	aga	gtc	gcc	Zgc Zaa	1003
1	09 a	ita a	acc a	mbr	gcc t Ala 1	rn (	Glu 1	hr (	Śĺy	Glu .	Asn	Leu (	Glu	Arg	Va⊥	Ата	Arg	
1	10 1	.re	LUT	1111	AIG I		300		-			305					310	1133
1	11 2	295			gaa			aaa .	atc	aca	tac	gag	ctt.	ggg	aag	gag	ttc	1133
1	13 t	ac	tcg	atg	gaa g Glu <i>B</i>	yar Nan	7 la 1		Val	Thr	Tyr	Glu	Leu	Gly	Lys	Glu	Phe	
1	14 7	'yr	Ser	мет	GIU A	15P -	nia .	o y o			320					325		1101
1	15					315		a++	t ct	cac	tta	atc	ggc	cag	tcc	ctc	tgg	1181
1	.17	ctt	ccg	atg	gag	gcc	cay '	LOU	Sar	Ara	Leu	Ile	Ğĺy	Gln	Ser	Leu	Trp	
1	.18 ]	Ĺeu	Pro	Met	GLu A	Ата	GIII .	Leu	361	332			-		340			
1	19				330 cgc				-~-	333	ctc	att	aaa	taa	ttc	ctc	ctc	1229
1	.21	gac	gtc	tcc	cgc	tcc	agc	act	ggc	aac	Tan	Val	Glu	Trp	Phe	Leu	Leu	
1	22	Āsp	Val	Ser	cgc Arg	Ser	Ser	Thr	Gry	AST	ьeu	vaı	GIU	355				
1	123			345					350					222	ccc	gat	αaa	1277
-	125	ann	aaσ	acc	tat	gag	agg	aat	gag	ctg	gcc	ccg	aac	Tura	Dro	Asn	Glu	
	126	Dra Dra	Lvs	Āla	tat Tyr	Glu	Arg	Asn	Glu	Leu	Ala	Pro	ASII	гуэ	FIO	Mop	0	
	127	111 Y	360		- 1		-	365					3/0		<b>1</b> - 1	~+~	222	1325
	120		200	cta	gcc	aσa	aga	cgg	cag	agc	tat	gaa	gga	ggc	tat	y La	Tur	
	122	aay	Clu	Leu	gcc Ala	Ara	Ara	Arg	Gln	Ser	Tyr	Glu	Gly	GLY	тyr	val	ъ	) }
	T 30	гÀг	GIU	ь <del>с</del> и	TTG	9	380					385					390	1373
	131	315			aga	~~~	tta	taa	gag	aac	ata	gtg	tac	cta	gat	ttt	aga	1 13/3
	133	gag	ccc	gag	aya	999	ccy	- 23	و ر									

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142	aac Asn	atc Ile	Ser	410 gag Glu	gtt Val	cag Gln	gaa Glu	ggt Gly 430	gac Asp	tat Tyr	gtc Val	ctt Leu	ggg Gly 435	att Ile	gac Asp	ggc Gly	1469
146	tgg Trp	cag Gln 440	425 aga Arg	gtt Val	aga Arg	aaa Lys	gta Val 445	taa	gaa Glu	tac Tyr	gac Asp	tac Tyr 450	aaa	ggg Gly	gag Glu	ctt Leu	1517
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153 154	455 gtt Val	aca Thr	aag Lys	aac Asn	gaa Glu 475	cga	caa Gln	acg Thr	aga Arg	ata Ile 480	aga Arg	gac Asp	agt Ser	ctt Leu	gct Ala 485	aag Lys	1613
158	tct Ser	ttc Phe	ctt Leu	Thr	aaa	aaa Lys	gtt Val	aag Lys	ggc Gly 495	aaq	ata Ile	ata Ile	acc Thr	act Thr 500	ccc Pro	ctt Leu	1661
159 161 162	ttc Phe	tat Tyr	Glu	490 ata Ile	ggc Gly	aga Arg	gcg Ala	Thr	agt Ser	gag Glu	aat Asn	att Ile	cca Pro 515	gaa	gaa Glu	gag Glu	1709
163 165 166		Leu	505 aag Lys	gga Gly	gag Glu	ctc Leu	Ala	510 ggc Gly	ata	cta Leu	ttg Leu	gct Ala 530	gaa Glu	gga Gly	acg Thr	ctc Leu	1757
167 169 170	++~	520 agg Arg	aaa Lys	gac Asp	gtt Val	Glu	Tyr	ttt Phe	gat Asp	tca Ser	Ser	cgc Arg	aaa	aaa Lys	cgg Arg	agg Arg 550	1805
171 173 174	535 att Ile	+	a 2 a	020	+ > +	540 cgt Arg	att	gag	ata	acc	att att	aga :	aaa	gac	gag	gag Glu	1853
178	gag Glu	ttt Phe	agg Arg	gat Asp 570	cgt Arg	ato	aca Thr	tac Tyr	att Ile 575	ttt Phe	gad	g cgt n Arg	ttg Leu	ttt Phe 580	G L y	g att 7 Ile	1901
182	act Thr	cca Pro	Ser	ato	tco	gaç Glu	aag Lys	aaa Lys 590	n gga s Gly	act	aac Asr	gca n Ala	gta Val	. 1111	cto Lev	aaa Lys	1949
186	gtt Val	Ala	Lys		aat Asr	gtt Val	tat Tyr 605	ctt Lei	aaa	gto Val	c aaq L Lys	g gaa s Glu 610	1 116	ato Met	g gad : Asp	aac Asn	1997
190	ata ) Ile	e Glu	. +	cta Lev	cat His	s Ala	c ccc	to	g gtt c Val	cto Le	age Are 625	g gga g Gly	a tto	tto Phe	gaa e Glu	a ggc 1 Gly 630	2045
193 194	4 Asp		t tca / Sei	a gta	L Asr	n Arg	att	ago L Aro	g ago g Aro	g Se:	c att	t att	c gca l Ala	a aco	c cad c Gli 645	g ggt n Gly	2093
19	5				635	. aad	r ati	aaa	a cto	o4)	u a tc	a aaa	a cto	g ct	c to	c cag r Gln	2141

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199 201 ctt ggt atc	cct cat	caa acg	tac ac	eg tat e	lag tat	Gln	Glu A	Asn (	Glv	- •
202 Leu Gly Ile	Pro His	Gin Thr	Tyr II	ir iyr e	TII TYT	675	-			
										2237
203 665 205 aaa gat cgg	g agc agg	tat ata	cty ye	ay ata a	hr Glv	Lvs	Asp (	Gly I	Leu	
205 aaa gat cgg 206 Lys Asp Arg	g Ser Arg	Tyr Ile	ren G	iu iie i	690	2,0				
207 680		685	~~~ +t	to ato a		aσa	aaq	aac	gct	2285
207 680 209 ata ctg tto 210 Ile Leu Pho	caa aca	ctc att	Clu D	he Tle S	Ser Glu	Ara	Lys .	Asn .	Āla	•
	e Gln Thr	Leu lle	GIY FI	116 116 6	705	5	4		710	
211 695 213 ctg ctt aa		700		nn naa 8	ata aac	aac	ttg	gaa	aac	2333
213 ctg ctt aa 214 Leu Leu As:	t aag gca	a ala cor	Cay a	ra Glu N	Met Asn	Asn	Leu	Glu	Asn	
	711			12.0						
215 217 aat gga tt	715		maa t	tc aat (	gtc agc	acg	gaa	tac	tat	2381
217 aat gga tt 218 Asn Gly Ph	t tac ago	y tou ser	Glu P	he Asn '	Val Ser	Thr	Glu	Tyr	Tyr	
219 221 gag ggċ aa	730	t dad tta	act c	tt daa	qqa act	CCC	tac	tac	ttt	2429
221 gag ggc aa 222 Glu Gly Ly	g git ta	r Asn Lei	Thr L	eu Glu	gly Thr	Pro	Tyr	Tyr	Phe	
229		d acc cat	ac t	cc ctq	tac ccc	tca	atc	atc	atc	2477
225 gcc aat gg 226 Ala Asn Gl	u Tle Le	y ace day	Asn S	Ser Leu	Tyr Pro	Ser	Ile	Ile	Ile	
										0.5.0.5
227 760 229 acc cac aa	c atc tc		- 3CG C	ctc aac	aga gaa	gga	tgc	aag	gaa	2525
229 acc cac aa 230 Thr His As	n Val Se	r Pro Asi	Thr L	Leu Asn	Arg Glu	Gly	Cys	Lys	Glu	
										0.573
	t acc cc	- and at	ggc c	cac cgc	ttc tgc	aag	gac	ttc	cca	2573
233 tat gac gt 234 Tyr Asp Va	il Ala Pr	o Gln Va	l Gly F	His Arg	Phe Cys	Lys	Asp	Phe	Pro	
	70	E		000						2621
	c ccq aq	c ctg ct	t gga g	gac ctc	cta gag	gag	agg	cag	aay	2021
237 gga ttt at 238 Gly Phe II	Le Pro Se	er Leu Le	u Gry F	Asp red	Leu Glu	ı Glu	Arg	GTII	гур	
										2669
	ag aag at	g aag gc	c acg a	att gac	ccg ato	gay	ayy	Luc	Len	2000
241 ata aag aa 242 Ile Lys L	ys Lys Me	et Lys Al	a Inc.	Ile Asp	Pro 116	835		цуз	ПСС	
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243 85 245 ctc gat to	ac agg ca	ag agg go	c atc	aag atc	tou Mi	a aac	. agc Ser	Tle	Leu	
245 ctc gat to 246 Leu Asp T	yr Arg Gl	In Arg Al	a iie	rAs iie	85 <sup>t</sup>					
										2765
247 840 249 ccc gag g	aa tgg c	tt cca gt	.c ctc	gay yaa	Gly Gl	n Val	His	Phe	. Val	
250 Pro Glu G	lu Tro Le	eu Pro Va 860	т теп	GIU GIU	865	<b>.</b>			870	
251 855			~ ~~~	ata ata	gag ga	a aat	gct	ggg	g aaa	2813
251 855 253 agg att g 254 Arg Ile G	ga gag c	tc ata ga	nc cyy	Mot Met	Glu Gl	u Ası	n Ála	Gly	/ Lys	
	ly Glu L	eu lle As	sp Arg	880	020			885	5	
255 257 gta aag a		75	70 022	ata ctt	gag gt	c aq	t ggg	g ctt	gaa	2861
257 gta aag a 258 Val Lys A	ga gag g	gc gay at	y yaa r Glu	Val Leu	Glu Va	1 Se	r Gly	, Lei	ı Glu	
259 261 gtc ccg t	890	פר פתת פי	ra act	220 220	gcc ga	g ct	c aaq	g aga	a gta	2909
261 gtc ccg t 262 Val Pro S	CC LLL d	en Ara A	ra Thr	Asn Lys	. Ála Gl	u Le	u Lys	s Ar	g Val	
	or rhe A	r.r.y 11.	910			91	5			
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266 Lys Ala Leu Ile Arg His Asp Tyr Ser Gly 193 320 267 920 925 269 ctg aag tcg ggg agg aga ata aag ata acc tct ggc cac agc ctc ttc 270 Leu Lys Ser Gly Arg Arg Ile Lys Ile Thr Ser Gly His Ser Leu Phe 270 Leu Lys Ser Gly Arg Arg Ile Lys Ile Thr Ser Gly His Ser Leu Phe 271 935 940 950 273 tct gtg aga aac ggg gag ctc gtt gaa gtt acg ggc gat gaa cta aag 274 Ser Val Arg Asn Gly Glu Leu Val Glu Val Thr Gly Asp Glu Leu Lys 275 955 277 cca ggt gac ctc gtt gca gtc cgg aga ttg aga ctc gag aga 278 Pro Gly Asp Leu Val Ala Val Pro Arg Arg Leu Glu Leu Pro Glu Arg 279 970 281 aac cac gtg ctg aac ctc gtt gaa ctg ctg ctc tt gga acg cac gaa gaa 282 Asn His Val Leu Asn Leu Val Glu Leu Leu Leu Leu Gly Thr Pro Glu Glu 283 985 285 gaa act ttg gac at gtc atg acg act cca gat aag aga 286 Glu Thr Leu Asp Ile Val Met Thr Ile Pro Val Lys Gly Lys Lys Asn 287 1000 1005 1010 289 ttc ttt aaa ggg atg ctc agg act ttc gag agg cca gag gac gag et ttt aaa ggg atg cac aga acg cac aga gac cac aga acg cac acg acg
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269 ctg aag tcg ggg agg aga ata aag ata acc tct gge cac agc tct trops of the Lev Lev Lev Lev Lev Lev Lev Lev Lev Le
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298 Gly Tyr Val Arg Leu Lys Lys Tie Gly Tyr Glu Ala Leu Val Glu Asn Val 301 tca ctt aag aac tac aga agg ctc tac gag gcg ctt gtc gag aac gtc 3389 302 Ser Leu Lys Asn Tyr Arg Arg Leu Tyr Glu Ala Leu Val Glu Asn Val 303 1065 1070 1075 305 aga tac aac ggc aac aag agg gag tac ctc gtt gaa ttc aat tcc atc 3437 306 Arg Tyr Asn Gly Asn Lys Arg Glu Tyr Leu Val Glu Phe Asn Ser Ile 307 1080 1085 1090 309 cgg gat gca gtt ggc ata atg ccc cta aaa gag ctg aag gag tgg aag 3485 310 Arg Asp Ala Val Gly Ile Met Pro Leu Lys Glu Leu Lys Glu Trp Lys 310 1095 1100 1105 1110 311 1095 1100 1105 1110 313 atc ggc acg ctg aac ggc ttc aga atg aga aag ctc att gaa gtg gac 3533 314 Ile Gly Thr Leu Asn Gly Phe Arg Met Arg Lys Leu Ile Glu Val Asp 314 Ile Gly Thr Leu Asn Gly Phe Arg Met Arg Lys Leu Ile Glu Val Asp 315 115 1120 1125 317 gag tcg tta gca aag ctc ctc ggc tac tac gtg agc gag ggc tat gca 3581 318 Glu Ser Leu Ala Lys Leu Leu Gly Tyr Tyr Val Ser Glu Gly Tyr Ala 319 1130 362 ggc tag agc tac agc gtg aag ctc 3629
301 tca ctt aag aac tac aga agg ctc tac gag gcg ctt gtc gag aac gtc 302 Ser Leu Lys Asn Tyr Arg Arg Leu Tyr Glu Ala Leu Val Glu Asn Val 303 1065 1070 1075 305 aga tac aac ggc aac aag agg gag tac ctc gtt gaa ttc aat tcc atc 306 Arg Tyr Asn Gly Asn Lys Arg Glu Tyr Leu Val Glu Phe Asn Ser Ile 307 1080 1085 1090 309 cgg gat gca gtt ggc ata atg ccc cta aaa gag ctg aag gag tgg aag 309 cgg gat gca gtt ggc ata atg ccc cta aaa gag ctg aag gag tgg aag 309 cgg gat gca gtt ggc ata atg ccc cta aaa gag ctg aag gag tgg aag 310 Arg Asp Ala Val Gly Ile Met Pro Leu Lys Glu Leu Lys Glu Trp Lys 310 Arg Asp Ala Val Gly Ile Met Pro Leu Lys Glu Leu Lys Glu Trp Lys 311 1095 1100 1105 1110 313 atc ggc acg ctg aac ggc ttc aga atg aga aag ctc att gaa gtg gac 3533 314 Ile Gly Thr Leu Asn Gly Phe Arg Met Arg Lys Leu Ile Glu Val Asp 317 gag tcg tta gca aag ctc ctc ggc tac tac gtg agc gag ggc tat gca 3581 318 Glu Ser Leu Ala Lys Leu Leu Gly Tyr Tyr Val Ser Glu Gly Tyr Ala 319 1130 1135 1140
302 Ser Leu Lys Asn Tyr Arg Arg Leu Tyr Gra Tag 1075 303 1065 1070 1075 305 aga tac aac ggc aac aag agg gag tac ctc gtt gaa ttc aat tcc atc 3437 306 Arg Tyr Asn Gly Asn Lys Arg Glu Tyr Leu Val Glu Phe Asn Ser Ile 307 1080 1085 1090 309 cgg gat gca gtt ggc ata atg ccc cta aaa gag ctg aag gag tgg aag 3485 310 Arg Asp Ala Val Gly Ile Met Pro Leu Lys Glu Leu Lys Glu Trp Lys 310 Arg Asp Ala Val Gly Ile Met Pro Leu Lys Glu Leu Lys Glu Trp Lys 311 1095 1100 1105 1110 313 atc ggc acg ctg aac ggc ttc aga atg aga aag ctc att gaa gtg gac 3533 314 Ile Gly Thr Leu Asn Gly Phe Arg Met Arg Lys Leu Ile Glu Val Asp 314 Ile Gly Thr Leu Asn Gly Phe Arg Met Arg Lys Leu Ile Glu Val Asp 315 1120 1125 317 gag tcg tta gca aag ctc ctc ggc tac tac gtg agc gag ggc tat gca 3581 318 Glu Ser Leu Ala Lys Leu Leu Gly Tyr Tyr Val Ser Glu Gly Tyr Ala 319 1130 1135 1140
303 1065  305 aga tac aac ggc aac aag agg gag tac ctc gtt gaa ttc aat tcc atc 305 aga tac aac ggc aac aag agg gag tac ctc gtt gaa ttc aat tcc atc 306 Arg Tyr Asn Gly Asn Lys Arg Glu Tyr Leu Val Glu Phe Asn Ser Ile 307 1080 1085 1090 309 cgg gat gca gtt ggc ata atg ccc cta aaa gag ctg aag gag tgg aag 309 cgg gat gca gtt ggc ata atg ccc cta aaa gag ctg aag gag tgg aag 309 cgg gat gca gtt ggc ata atg ccc cta aaa gag ctg aag gag tgg aag 310 Arg Asp Ala Val Gly Ile Met Pro Leu Lys Glu Leu Lys Glu Trp Lys 310 Arg Asp Ala Val Gly Ile Met Pro Leu Lys Glu Leu Lys Glu Trp Lys 311 1095 1100 1105 1110 313 atc ggc acg ctg aac ggc ttc aga atg aga aag ctc att gaa gtg gac 313 atc ggc acg ctg aac ggc ttc aga atg aga aag ctc att gaa gtg gac 314 Ile Gly Thr Leu Asn Gly Phe Arg Met Arg Lys Leu Ile Glu Val Asp 315 1120 1125 317 gag tcg tta gca aag ctc ctc ggc tac tac gtg agc gag ggc tat gca 318 Glu Ser Leu Ala Lys Leu Leu Gly Tyr Tyr Val Ser Glu Gly Tyr Ala 319 1130 1135 1140 319 3437
303 aga tac aac ggc aac aag agg gag tac ctc gtt gaa ttc aat tcc atc 3437 305 aga tac aac ggc aac aag agg gag tac ctc gtt gaa ttc aat tcc atc 3437 306 Arg Tyr Asn Gly Asn Lys Arg Glu Tyr Leu Val Glu Phe Asn Ser Ile 1090 307 1080 1085 1090 309 cgg gat gca gtt ggc ata atg ccc cta aaa gag ctg aag gag tgg aag 3485 310 Arg Asp Ala Val Gly Ile Met Pro Leu Lys Glu Leu Lys Glu Trp Lys 1110 311 1095 1100 1105 1110 313 atc ggc acg ctg aac ggc ttc aga atg aga aag ctc att gaa gtg gac 3533 314 Ile Gly Thr Leu Asn Gly Phe Arg Met Arg Lys Leu Ile Glu Val Asp 1120 1125 315 1115 1120 1125 317 gag tcg tta gca aag ctc ctc ggc tac tac gtg agc gag ggc tat gca 3581 318 Glu Ser Leu Ala Lys Leu Leu Gly Tyr Tyr Val Ser Glu Gly Tyr Ala 1130 1130 1135 1140 319 3629
306 Arg Tyr Asn Gly Asn Lys Arg Glu Tyr Bed 1090 307 1080 1085 1090 309 cgg gat gca gtt ggc ata atg ccc cta aaa gag ctg aag gag tgg aag 310 Arg Asp Ala Val Gly Ile Met Pro Leu Lys Glu Leu Lys Glu Trp Lys 310 Arg Asp Ala Val Gly Ile Met Pro Leu Lys Glu Leu Lys Glu Trp Lys 311 1095 1100 1105 1110 313 atc ggc acg ctg aac ggc ttc aga atg aga aag ctc att gaa gtg gac 314 Ile Gly Thr Leu Asn Gly Phe Arg Met Arg Lys Leu Ile Glu Val Asp 314 Ile Gly Thr Leu Asn Gly Phe Arg Met Arg Lys Leu Ile Glu Val Asp 315 1120 1125 317 gag tcg tta gca aag ctc ctc ggc tac tac gtg agc gag ggc tat gca 318 Glu Ser Leu Ala Lys Leu Leu Gly Tyr Tyr Val Ser Glu Gly Tyr Ala 319 1130 1135 1140 319
307 1080  309 cgg gat gca gtt ggc ata atg ccc cta aaa gag ctg aag gag tgg aag 309 cgg gat gca gtt ggc ata atg ccc cta aaa gag ctg aag gag tgg aag 310 Arg Asp Ala Val Gly Ile Met Pro Leu Lys Glu Leu Lys Glu Trp Lys 310 Arg Asp Ala Val Gly Ile Met Pro Leu Lys Glu Leu Lys Glu Trp Lys 311 1095  1100  1105  1110  313 atc ggc acg ctg aac ggc ttc aga atg aga aag ctc att gaa gtg gac 314 Ile Gly Thr Leu Asn Gly Phe Arg Met Arg Lys Leu Ile Glu Val Asp 314 Ile Gly Thr Leu Asn Gly Phe Arg Met Arg Lys Leu Ile Glu Val Asp 315  1120  1125  317 gag tcg tta gca aag ctc ctc ggc tac tac gtg agc gag ggc tat gca 318 Glu Ser Leu Ala Lys Leu Leu Gly Tyr Tyr Val Ser Glu Gly Tyr Ala 319  1130  1130  3485  3485
309 cgg gat gca gtt ggc ata atg ccc cta aaa gag ctg aag gag tgg dag 310 Arg Asp Ala Val Gly Ile Met Pro Leu Lys Glu Leu Lys Glu Trp Lys 311 1095 1100 1105 1110 313 atc ggc acg ctg aac ggc ttc aga atg aga aag ctc att gaa gtg gac 314 Ile Gly Thr Leu Asn Gly Phe Arg Met Arg Lys Leu Ile Glu Val Asp 315 1120 1125 317 gag tcg tta gca aag ctc ctc ggc tac tac gtg agc gag ggc tat gca 318 Glu Ser Leu Ala Lys Leu Leu Gly Tyr Tyr Val Ser Glu Gly Tyr Ala 319 1130 1135 1140 319 3629
310 Arg Asp Ala Val Gly He Met Pro Let Lys Cit Lys 1100 1105 1110  311 1095 1100 1105 1105 3533  313 atc ggc acg ctg aac ggc ttc aga atg aga aag ctc att gaa gtg gac 3533  314 Ile Gly Thr Leu Asn Gly Phe Arg Met Arg Lys Leu Ile Glu Val Asp 1120 1125  315 1115 1120 1125  317 gag tcg tta gca aag ctc ctc ggc tac tac gtg agc gag ggc tat gca 3581  318 Glu Ser Leu Ala Lys Leu Leu Gly Tyr Tyr Val Ser Glu Gly Tyr Ala 1130 1130 1130 3629
311 1095 313 atc ggc acg ctg aac ggc ttc aga atg aga aag ctc att gaa gtg gac 313 atc ggc acg ctg aac ggc ttc aga atg aga aag ctc att gaa gtg gac 314 Ile Gly Thr Leu Asn Gly Phe Arg Met Arg Lys Leu Ile Glu Val Asp 315 1115 1120 1125 317 gag tcg tta gca aag ctc ctc ggc tac tac gtg agc gag ggc tat gca 318 Glu Ser Leu Ala Lys Leu Leu Gly Tyr Tyr Val Ser Glu Gly Tyr Ala 319 1130 1130 1135 362
314 Ile Gly Thr Leu Asn Gly Phe Arg Met Arg Lys Lou 1125 315 1115 1120 1125 317 gag tcg tta gca aag ctc ctc ggc tac tac gtg agc gag ggc tat gca 3581 318 Glu Ser Leu Ala Lys Leu Leu Gly Tyr Tyr Val Ser Glu Gly Tyr Ala 319 1130 1135 1140 319 310 310 310 310 310 310 310 310 310 310
315 1115 3181 317 gag tcg tta gca aag ctc ctc ggc tac tac gtg agc gag ggc tat gca 3581 318 Glu Ser Leu Ala Lys Leu Leu Gly Tyr Tyr Val Ser Glu Gly Tyr Ala 319 1130 1130 1140 319 200 200 200 200 200 200 200 200 200 20
315 317 gag tcg tta gca aag ctc ctc ggc tac tac gtg agc gag ggc tat gca 3581 318 Glu Ser Leu Ala Lys Leu Leu Gly Tyr Tyr Val Ser Glu Gly Tyr Ala 318 Glu Ser Leu Ala Lys Leu Leu Gly Tyr Tyr Val Ser Glu Gly Tyr Ala 319 1130 1135 3629
318 Glu Ser Leu Ala Lys Leu Leu Gly Tyl Tyl Tal 1140 319 1130 1135 1140 319 232 335 ggc tgg agc tac agc gtg aag ctc 3629
319 1130 1130 and tag ago tag ago gtg aag ctc 3629
313 and and tag ago tag ago colo 3023
321 aga aag cag agg aat ccc ddd ddc gyc cyg gy ag a tha ton
322 Arg Lys Gln Arg Asn Pro Lys Ash Gly 11p 301 17
the standard did day aga got a
326 Tyr Asn Glu Asp Pro Glu Vai Leu Asp Asp 1170
327 1160 1165 1170 329 agg ttt ttc ggg aag gtg agg cgg ggc agg aac tac gtt gag ata ccg 3725
329 agg ttt ttc ggg aag gtg agg cgg ggc agg aac sir s

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/852,922

DATE: 06/21/2001

TIME: 10:22:30

Input Set : A:\Cpg.pto

Output Set: N:\CRF3\06202001\1852922.raw

L:8 M:270 C: Current Application Number differs, Replaced Application Number

L:9 M:271 C: Current Filing Date differs, Replaced Current Filing Date